



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Ivan Markovic, et al. Art Unit : 2776
Serial No. : 08/978,753 Examiner : Cesar B. Paula
Filed : November 26, 1997
Title : DISPLAYING THE APPEARANCE OF A PRINTED AND ASSEMBLED
DOCUMENT

BOX AF

Commissioner for Patents
Washington, D.C. 20231

BRIEF ON APPEAL

(1) Real Party in Interest

The real party in interest is Adobe Systems Incorporated.

(2) Related Appeals and Interferences

None.

(3) Status of Claims

Claims 1-47 are pending.

Claims 1-47 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,774,232 ("Tabata") in view of U.S. Patent No. 5,696,605 ("Miller"), and in further view of U.S. Patent No. 5,752,053 ("Takakura").

(4) Status of Amendments

No amendments have been made.

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

October 3, 2002
Date of Deposit

Signature

Nikia M. Mc Nillion

Typed or Printed Name of Person Signing Certificate

(5) Summary of Invention

Methods and apparatus for depicting a hardcopy document. A first electronic document is received in a computer. A user input that selects an instruction for assembling a hard copy document is also received in a computer. A visual appearance of the first electronic document once printed and assembled in accordance with the instruction is determined in the computer, and the determined visual appearance is produced as output (Specification page 1, line 29 – page 2, line 3).

A copy of the first electronic document may be modified, e.g., by adding a tile depicting a change in the visual appearance resulting from the instruction to a page of the first electronic document, to generate the second electronic document. The database may include an entry for each instruction identifier, each entry including an instruction name and a first tile associated with a front page of the hard copy document, a second tile associated with an inside right page of the hard copy document, a third tile associated with an inside left page of the hard copy document, and a fourth tile associated with a final page of the hard copy document (Specification, page 2, lines 12-20). The instruction may identify a printing media to be used in the hard copy document, such as the weight, color, texture, or transparency of the printing media, a preexisting image on the printing media, a cover to be used in the hard copy document, or a physical modification of a printing media used in the hard copy document, such hole punching, folding or cutting of the printing media (Specification, page 2, line 30 – page 3, line 6).

(6) Issues

Are claims 1-47 properly rejected under 35 U.S.C. § 103(a) as unpatentable over Tabata in view of Miller, and in further view of Takakura?

(7) Grouping of Claims

For the purpose of this appeal, the claims are grouped as follows:

1. Claims 1-47 stand together.
 - a. Claims 1-22, 28-37 and 41-45 are separately patentable from claims listed in (1) above.
 - i. Claims 5-11, 28-29, 32-33, 35-37 and 41 are separately patentable from claims listed in (a) above.
 - A. Claims 8-11 and 35-36 are separately patentable from the claims listed in (i) above.
 - ii. Claims 13-15 are separately patentable from the claims listed in (a) above.
 - iii. Claims 19-20 and 30-31 are separately patentable from the claims listed in (a) above.
 - iv. Claims 43-44 are separately patentable from the claims listed in (a) above.
 - b. Claim 38 is separately patentable from claims listed in (1) above.
 - c. Claims 39 is separately patentable from claims listed in (1) above.
 - d. Claims 46-47 are separately patentable from the claims listed in (1) above.

(8) Argument

Are claims 1-47 properly rejected under 35 U.S.C. § 103(a) as unpatentable over Tabata in view of Miller, and in further view of Takakura?

Group 1: Claims 1-47

Claim 1 requires determining in the computer a visual appearance of an electronic document as if printed and assembled in accordance with an instruction for assembling a hard copy document, and then displaying the determined visual appearance.

The other independent claims in group 1 include identical or similar limitations. For example, claim 23 requires generating a second electronic document which depicts a visual appearance of a first electronic document once printed and assembled in accordance with an

instruction for assembling a hard copy document, and then displaying the second electronic document. Claims 38-40 and 46 require determining in the computer a visual appearance of a first electronic document as if assembled in accordance with an instruction for assembling a hard copy document and then printed, and producing as output the determined visual appearance.

Tabata does not teach or suggest determining, in the computer, a visual appearance of an electronic document as if printed and assembled in accordance with an instruction for assembling a hard copy document, and then displaying the determined visual appearance.

Tabata teaches an electronic photocopier that optically scans a hard copy document. The photocopier determines the size of the hard copy document (e.g., A3 or B5 paper), and then prints the scanned image onto one or two sheets of paper of a standard size (e.g., A4 paper). The user can set the stapling position on the printed copy by selecting an option displayed on a control panel (col. 20, lines 57-60, FIG. 13A). The control panel is a conventional LCD display screen with a touch panel (see col. 20, lines 42-44). Tabata uses iconic (picture) representations to present stapling options to the user on a touch panel.

However, Tabata does not actually determine and then display the visual appearance of the electronic document as if printed and assembled in accordance with an instruction. Tabata's simple iconic representations on a touch screen do not include the content (e.g., text, graphics, etc.) of the electronic document. Therefore, Tabata's iconic symbols cannot have the visual appearance of the electronic document as if printed.

In addition, Tabata never discusses using the scanned image except for transfer onto the recording paper. Other than the possible rotation of the entire image to fit onto the recording paper, Tabata does not discuss any manipulation or modification of the image data, as would be required to determine and then display the visual appearance of the electronic document as if printed and assembled. Therefore, whatever the internal use of the image, it is not the visual appearance of the document as if printed and assembled.

Miller also does not teach or suggest determining, in the computer, a visual appearance of an electronic document as if printed and assembled in accordance with an instruction for assembling a hard copy document, and then displaying the determined visual appearance. Miller teaches a laser based printing system. Miller optically reads a hard copy document with a scanner section, and then copies the scanned image onto print media in a printer section 8 (col. 3,

lines 1-19). The scanned image data can be displayed on a display screen (col. 4, lines 22-25). However, if a user desires to modify the image data (such as reducing/enlarging, cropping) the document must be rescanned to produce new image data (col. 2, lines 59-60). As with Tabata, Miller does not discuss using the scanned image except for transfer onto a recording paper or print media. Thus, Miller also does not discuss any manipulation or modification of the image data, as would be required to determine and then display the visual appearance of the electronic document as if printed and assembled.

Takakura also does not teach or suggest determining, in the computer, a visual appearance of an electronic document as if printed and assembled in accordance with an instruction for assembling a hard copy document, and then displaying the determined visual appearance.

Takakura teaches a conventional document processing system in which specific pages can be given different formatting parameters (e.g., margins or alignment). The "print binding" discussed in Takakura are the particular pages (e.g., the front and back pages) of the electronic document that need to be printed in a different format, it is not the binding that is used to hold pages of a document together.

Takakura also teaches that "one integrated document consisting of a plurality of pages can be output by a single output instruction" (col. 2, lines 63-64). Thus, Takakura can print multiple pages having different formats in a single print run. The "single output instruction" refers to clicking (or pressing) a print button, not to assembly instructions. Nowhere is there any suggestion that Takakura shows the visual appearance of the electronic document as if printed and assembled in accordance with an instruction for assembling a hard copy document.

Thus, none of the references show determining in the computer and displaying a visual appearance of the first electronic document as if printed and assembled in accordance with the instruction for assembling a hard copy document. In short, there is simply no suggestion from the references that an electronic document could be shown as it would appear once stapled, hole punched, or the like. Nor does the prior art provide any motivation to combine or modify the references to yield a method that includes determining in the computer a visual appearance of the first electronic document as if printed and assembled in accordance with the instruction for assembling a hard copy document.

Because neither Tabata, Miller, nor Takakura, alone or in combination, discloses determining and then displaying the visual appearance of the electronic document as if printed and assembled in accordance with an instruction, no *prima facie* case of obviousness has been established and the rejections under § 103(a) were improper.

Subgroup 1(a): Claims 1-22, 28-37 and 41-45

Claims 1-22, 28-37 and 41-45 are separately patentable from the balance of the claims listed in Group 1 above. Claim 1 recites displaying the determined visual appearance with the indicia of assembly overlaid with the content.

Even if claim 1 were to be interpreted so broadly that the iconic symbols of LCD display of Tabata are considered to be a visual output of an electronic document as if printed (which Applicant denies), claim 1 specifies that the visual appearance has indicia of assembly overlaid with the content. Clearly the iconic symbols of Tabata do not show the content of the scanned electronic document overlaid with indicia of assembly.

Miller teaches a laser based printing system. Miller optically reads a hard copy document with a scanner section, and then copies the scanned image onto print media in a printer section 8 (col. 3, lines 1-19). The scanned image data can be displayed on a display screen (col. 4, lines 22-25). However, if a user desires to modify the image data (such as reducing/enlarging, cropping) the document must be rescanned to produce new image data (col.2, lines 59-60). Thus, Miller teaches only displaying scanned image data and does not discuss any manipulation or modification of the image data as would be required to display the indicia of assembly overlaid with the content of an electronic document.

Takakura teaches a conventional document processing system in which specific pages can be given different formatting parameters (e.g., margins or alignment). The "print binding" discussed in Takakura are the particular pages (e.g., the front and back pages) of the electronic document that need to be printed in a different format, it is not the binding that is used to hold pages of a document together.

Takakura also teaches that "one integrated document consisting of a plurality of pages can be output by a single output instruction" (col. 2, lines 63-64). Thus, Takakura can print multiple pages having different formats in a single print run. The "single output instruction"

refers to clicking (or pressing) a print button, not to assembly instructions. Nowhere is there any suggestion that Takakura shows the indicia of assembly overlaid with the content of an electronic document.

Because neither Tabata, Miller, nor Takakura, alone or in combination, discloses displaying the determined visual appearance with the indicia of assembly overlaid with the content, no *prima facie* case of obviousness has been established, and therefore the rejections under § 103(a) were improper.

Subgroup 1(a)(i): Claims 5-11, 28-29, 32-33, 35-37 and 41

Claims 5-11, 28-29, 32-33, 35-37 and 41 are separately patentable from the balance of the claims listed in Group 1 and Subgroup 1(a). The claims recite adding a tile depicting a change in the visual appearance resulting from the instruction to a page of the first electronic document. A tile is an image or a graphic element (Specification, page 9, line 19). The tile provides a specific mechanism to modify the copy of the first electronic document. This feature has the advantage that it may be simpler to add a tile than to edit the underlying content.

Tabata teaches a conventional photocopier control panel in the form of an LCD display screen with a touch panel (see col. 20, lines 42-44). Tabata does not teach adding tiles to an electronic document.

Miller teaches a laser based printing system. Miller optically reads a hard copy document with a scanner section, and then copies the scanned image onto print media in a printer section 8 (col. 3, lines 1-19). The scanned image data can be displayed on a display screen (col. 4, lines 22-25). However, if a user desires to modify the image data (such as reducing/enlarging, cropping) the document must be rescanned to produce new image data (col. 2, lines 59-60). Miller does not discuss any manipulation or modification of the image data, as would be required to add tiles to an electronic document.

Takakura teaches a conventional document processing system in which specific pages can be given different formatting parameters (e.g., margins or alignment). Takakura does disclose using forms in a document. A form image as disclosed by Takakura is a display pattern that is used as a background (col. 4, lines 26-28). However, displaying a form image based on a specified page format is not the same thing as adding a tile depicting a change in the visual

appearance resulting from the instruction. Takakura's forms are simply part of what will be printed. The forms do not show or depict a change in the visual appearance resulting from the instruction of assembly.

Because neither Tabata, Miller, nor Takakura, either alone or in combination, discloses adding a tile depicting a change in the visual appearance resulting from the instruction to a page of the first electronic document, no *prima facie* case of obviousness has been established and the claims in this subgroup are allowable.

Subgroup 1(a)(i)(A): Claims 8-11 and 35-36

Claims 8-11 and 35-36 are separately patentable from the claims listed in Group 1, Subgroup 1(a) and Subgroup 1(a)(i). The claims recite that each entry for each of the instruction identifiers in a database includes a first tile associated with a front page of the hard copy document, a second tile associated with an inside right page of the hard copy document, a third tile associated with an inside left page of the hard copy document, and a fourth tile associated with a final page of the hard copy document.

For example, referring to FIGS. 2D-2F, for a document assembly parameter corresponding to a staple, the tiling instructions 64 would include the following entries: for the first page, overlay a short diagonal segment in the upper left-hand corner of the page; for the inside-left pages, overlay a triangular shaded area in the upper right hand corner of the page; for the inside-left pages, overlay a triangular shaded area in the upper right hand corner of the page; and for the last page, overlay two short diagonal segments in the upper right-hand corner of the page (Specification, page 9, lines 21-27). This feature has the advantage that it may quickly create the visual appearance for different portions of the electronic document.

Tabata teaches a conventional photocopier control panel in the form of an LCD display screen with a touch panel (see col. 20, lines 42-44). Miller teaches a laser based printing system. Miller optically reads a hard copy document with a scanner section, and then copies the scanned image onto print media in a printer section 8 (col. 3, lines 1-19). However, neither Tabata nor Miller teaches a database including four tiles, one for each for the front page, inside right page, inside left page, and final page of the electronic document.

Takakura teaches a conventional document processing system. Takakura discloses that documents can be printed in a double-sided fashion (col. 5, lines 14-17). However, this does not imply that one would have a database entry with tiles for different pages of the document.

Because neither Tabata, Miller, nor Takakura, either alone or in combination, discloses having a database entry with tiles for different pages of the document, no *prima facie* case of obviousness has been established. For at least these reasons the claims in this subgroup are allowable.

Subgroup 1(a)(ii): Claims 13-15

Claims 13-15 are separately patentable from the balance of the claims listed in Group 1 and Subgroup 1(a) above. The claims recite that the instruction identifies a printing media to be used in the hard copy document. This feature has the advantage of allowing a user to select and preview features of the print media that the user desires in the assembled hard copy document. For example, as recited in claim 14, the user may select various features associated with aspects of the printing media, such as the weight, color, texture, or transparency.

Tabata teaches a conventional photocopier control panel in the form of an LCD display screen with a touch panel (see col. 20, lines 42-44). Tabata uses iconic (picture) representations to present stapling options to the user on a touch panel. Tabata does teach that the photocopier has a sort function which sorts recording paper and a staple function which binds a bundle of sorted recording paper into a book (col. 6, lines 18-34). However, even assuming that Tabata discloses determining and then displaying a visual appearance of an electronic document as if printed and assembled in accordance with a binding instruction (which Applicant denies), Tabata still fails to disclose that the instruction identifies a printing media to be used in the hard copy document.

Miller optically reads a hard copy document with a scanner section, and then copies the scanned image onto print media in a printer section 8 (col. 3, lines 1-19). Even though Miller's print media may be any variety of sheet sizes, types and colors (col. 3, lines 10-20), Miller still fails to suggest determining in the computer a visual appearance of an electronic document as if printed and assembled in accordance with an instruction identifying a printing media to be used in the hard copy document.

Because neither Tabata nor Miller, either alone or in combination, discloses determining in the computer a visual appearance of an electronic document as if printed and assembled in accordance with an instruction that identifies a printing media to be used in the hard copy document, no *prima facie* case of obviousness has been established and the claims in this subgroup are allowable.

Subgroup 1(a)(iii): Claims 19-20 and 30-31

Claims 19-20 and 30-31 are separately patentable from the balance of the claims listed in Group 1 and Subgroup 1(a) above. The claims recite that the instruction identifies a physical modification of a printing media to be used in the hard copy document. This feature has the advantage of allowing a user to select and preview these physical modification features that the user desires in the assembled hard copy document. For example, the user may select parameters such as hole punching (including the number and location of drill holes), folding (including the number and direction of folds), and cutting (including the number and direction of cuts) (Specification, page 6, lines 10-13).

Tabata teaches a conventional photocopier control panel in the form of an LCD display screen with a touch panel (see col. 20, lines 42-44). Tabata uses iconic (picture) representations to present stapling options to the user on a touch panel. Tabata does teach that the photocopier has a sort function which sorts recording paper and a staple function which binds a bundle of sorted recording paper into a book (col. 6, lines 18-34). However, even assuming that Tabata discloses determining and then displaying a visual appearance of an electronic document as if printed and assembled in accordance with a binding instruction (which Applicant denies), this still would not be indicative of the physical modification of a printing media to be used in the hard copy document.

Because Tabata does not disclose displaying a visual appearance of a physical modification of a printing media, no *prima facie* case of obviousness has been established and the claims in this subgroup are allowable.

Subgroup 1(a)(iv): Claims 43-44

Claims 43-44 are separately patentable from the balance of the claims listed in Group 1 and Subgroup 1(a) above. The claims recite obscuring a portion of the output in areas corresponding to a portion of the hard copy document that would be obscured when the hard copy document is printed and assembled in accordance with the instruction. This feature has the advantage of allowing a user to visually inspect the appearance of the electronic document as if printed, so that the user can note errors or unaesthetic elements that would be present in the assembled hard copy document. For example, the user may note that punch marks will obscure a portion of the text, and therefore the user will know that either the margins of the text will need to be changed or the three-hole punching will need to be eliminated (Specification, page 7, lines 4-8).

Tabata teaches a conventional photocopier control panel in the form of an LCD display screen with a touch panel (see col. 20, lines 42-44). Tabata uses the iconic (picture) representations to present stapling options to the user on a touch panel. However, Tabata's iconic representations of the staples. Thus, it follows that Tabata fails to teach obscuring a portion of the output in areas corresponding to a portion of the hard copy document that would be obscured when the hard copy document is printed and assembled in accordance with the instruction.

Because Tabata does not teach or suggest obscuring a portion of the output in areas corresponding to a portion of the hard copy document that would be obscured when the hard copy document is printed and assembled in accordance with the instruction, no *prima facie* case of obviousness has been established and the claims in this subgroup are allowable.

Subgroup 1(b): Claim 38

Claim 38 is separately patentable from the balance from the claims listed in Group 1 above. Claim 38 recites that the instruction identifies a pre-printing physical characteristics of a print media on which the electronic document will be printed. This feature has the advantage of allowing a user to select and preview features of the print media that the user desires in the

assembled hard copy document. For example, various features associated with aspects of the printing media, such as pre-existing images including watermarks, borders, engravings or designs, may be selected by the user.

Even if claim 1 were to be interpreted so broadly that the iconic symbols of LCD display of Tabata are considered to be a visual output of an electronic document as if printed and assembled in accordance with an instruction for assembling a hardcopy document (which Applicant denies), Tabata still fails to disclose that the instruction identifies a printing media to be used in the hard copy document.

Miller optically reads a hard copy document with a scanner section, and then copies the scanned image onto print media in a printer section 8 (col. 3, lines 1-19). Even though Miller's print media may be any variety of sheet sizes, types and colors (col. 3, lines 10-20), Miller still fails to suggest determining in the computer a visual appearance of an electronic document as if printed and assembled in accordance with an instruction identifying a printing media to be used in the hard copy document. As with Tabata, Miller does not discuss using the scanned image except for transfer onto a recording paper or print media. Thus, Miller also does not discuss any manipulation or modification of the image data, as would be required to determine and then display the visual appearance of the electronic document as if printed and assembled according to an instruction that identifies a pre-printing physical characteristics of a print media.

Takakura also does not teach or suggest determining, in the computer, a visual appearance of an electronic document as if printed and assembled in accordance with an instruction for assembling a hard copy document, and then displaying the determined visual appearance.

Takakura teaches a conventional document processing system in which specific pages can be given different formatting parameters (e.g., margins or alignment). The "print binding" discussed in Takakura are the particular pages (e.g., the front and back pages) of the electronic document that need to be printed in a different format, it is not the pre-printing physical characteristics of a print media.

Takakura also teaches that "one integrated document consisting of a plurality of pages can be output by a single output instruction" (col. 2, lines 63-64). Thus, Takakura can print multiple pages having different formats in a single print run. The "single output instruction"

refers to clicking (or pressing) a print button, not to assembly instructions. Nowhere is there any suggestion that Takakura shows the visual appearance of the electronic document as if printed and assembled in accordance with an instruction that identifies a pre-printing physical characteristics of a print media on which the electronic document will be printed.

Thus, none of the references show determining in the computer and displaying a visual appearance of the first electronic document as if printed and assembled in accordance with the instruction that identifies a pre-printing physical characteristics of a print media on which the electronic document will be printed. There is no suggestion from the references that an electronic document could be shown as it would appear including watermarks, borders, engravings or other designs.

Because neither Tabata, Miller, nor Takakura, alone or in combination, discloses determining and then displaying the visual appearance of the electronic document as if printed and assembled in accordance with an instruction that identifies a pre-printing physical characteristics of a print media, no prima facie case of obviousness has been established and the rejections under § 103(a) were improper.

Subgroup 1(c): Claim 39

Claim 39 is separately patentable from the balance from the claims listed in Group 1 above. The claim recites determining, in the computer, a visual appearance of an electronic document as if printed and assembled in accordance with an instruction that physical modifies a printing media on which the electronic document will be printed. This feature has the advantage of allowing a user to select and preview these physical modification features that the user desires in the assembled hard copy document. For example, the user may select parameters such as hole punching (including the number and location of drill holes), folding (including the number and direction of folds), and cutting (including the number and direction of cuts) (Specification, page 6, lines 10-13).

Even if claim 1 were to be interpreted so broadly that the iconic symbols of LCD display of Tabata are considered to be a visual output of an electronic document as if printed and assembled in accordance with an instruction for assembling a hardcopy document (which

Applicant denies), Tabata still fails to disclose that the instruction physical modifies a printing media on which the electronic document will be printed.

Miller optically reads a hard copy document with a scanner section, and then copies the scanned image onto print media in a printer section 8 (col. 3, lines 1-19). Even though Miller does disclose a signature set stitcher 10a, signature set folder 10b, and signature set trimmer 10c (col. 3, lines 40-67), Miller does not teach or suggest using these items to manipulate or modify scanned image data. Thus, Miller fails to suggest determining, in the computer, a visual appearance of an electronic document as if printed and assembled in accordance with an instruction that physical modifies a printing media on which the electronic document will be printed.

Takakura also does not teach or suggest determining, in the computer, a visual appearance of an electronic document as if printed and assembled in accordance with an instruction that physical modifies a printing media on which the electronic document will be printed. Thus, none of the references show determining in the computer and displaying a visual appearance of the first electronic document as if printed and assembled in accordance with the instruction that physical modifies a printing media on which the electronic document will be printed.

Because neither Tabata, Miller, nor Takakura, alone or in combination, discloses determining and then displaying the visual appearance of the electronic document as if printed and assembled in accordance with an instruction that identifies a physical modification of a printing media to be used in the hard copy document, no *prima facie* case of obviousness has been established and the rejections under § 103(a) were improper.

Subgroup 1(d): Claims 46-47

Claims 46-47 are separately patentable from the balance of the claims listed in Group 1 above.

Claims 46-47 require determining as output a visual appearance of the electronic document once printed with the content arranged according to the formatting information and

assembled in accordance with an instruction. For example, a source document can contain traditional content, such as text, graphics and image data. In addition, the source document may include formatting information that is traditionally associated with the printing of the document, and the formatting information may include the page size, margins, page numbering and line numbering (Specification, page 5, lines 11-15).

Even if claim 1 were to be interpreted so broadly that the iconic symbols of LCD display of Tabata are considered to be a visual output of an electronic document as if printed (which Applicant denies), claim 46 specifies that the visual appearance has content arranged according to the formatting information. Clearly the iconic symbols of Tabata do not show the content arranged according to the formatting information.

Because Tabata does not disclose that the visual appearance has content arranged according to the formatting information, no *prima facie* case of obviousness has been established and the claims in this subgroup are allowable.

(9) Appendix

The Appendix to this brief is a set of the claims currently pending in the case.

Applicant : Ivan Markovic, et al.
Serial No. : 08/978,753
Filed : November 26, 1997
Page : 16

Attorney Ticket No.: 07844-199001 / P178

The brief fee of \$320 is enclosed. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 10/3/02

David J. Goren
David J. Goren
Reg. No. 34,609

Fish & Richardson P.C.
500 Arguello Street, Suite 500
Redwood City, California 94063
Telephone: (650) 839-5070
Facsimile: (650) 839-5071

50096814.doc

Appendix of Claims

1. A method of depicting a hard copy document, comprising:
receiving in a computer a first electronic document having a content;
receiving in the computer a user input that selects an instruction for assembling a hard copy document;
determining in the computer indicia of assembly and a visual appearance of the first electronic document as if printed and assembled in accordance with the instruction; and
displaying the determined visual appearance with the indicia of assembly overlaid with the content.
2. The method of claim 1, further comprising:
generating a second electronic document which depicts the first electronic document once printed and assembled in accordance with the instruction; and
displaying the second electronic document.
3. The method of claim 2, further comprising receiving a second user input that selects a second instruction for assembling the hard copy document, and generating a modified second electronic document which depicts the first electronic document once printed and assembled in accordance with the first and second instructions.
4. The method of claim 2, further comprising:
modifying a copy of the first electronic document to generate the second electronic document.
5. The method of claim 4, wherein modifying the copy of the first electronic document includes adding a tile depicting a change in the visual appearance resulting from the instruction to a page of the first electronic document.

6. The method of claim 5, further comprising retrieving the tile from a database which associates a plurality of instruction identifiers with a plurality of tiles.

7. The method of claim 6, wherein the database includes an entry for each instruction identifier, each entry including a instruction name and at least one tile.

8. The method of claim 7, wherein each entry includes a first tile associated with a front page of the hard copy document, a second tile associated with an inside right page of the hard copy document, a third tile associated with an inside left page of the hard copy document, and a fourth tile associated with a final page of the hard copy document.

9. The method of claim 8, wherein retrieving the tile includes determining whether the page of the first electronic document is a first page, an inside right page, an inside left page, or a final page, and selecting the tile based on this determination.

10. The method of claim 8, wherein modifying the copy of the first electronic document includes inserting a page into the first electronic document, and adding a tile depicting a change in the visual appearance resulting from the instruction to the inserted page of the copy of the first electronic document.

11. The method of claim 10, wherein the inserted page is a cover sheet.

12. The method of claim 1, wherein the user input is received from an electronic file.

13. The method of claim 1, wherein the instruction identifies a printing media to be used in the hard copy document.

14. The method of claim 13, wherein the instruction identifies the weight, color, texture, or transparency of the printing media.

15. The method of claim 13, wherein the instruction identifies a pre-existing image on the printing media.

16. The method of claim 1, wherein the instruction identifies a cover to be used in the hard copy document.

17. The method of claim 1, wherein the instruction identifies a binding to be used in the hard copy document.

18. The method of claim 17, wherein the instruction identifies a veloTM, tape, spiral, multi-ring, comb, magazine style, or stapling binding.

19. The method of claim 1, wherein the instruction identifies a physical modification of a printing media used in the hard copy document.

20. The method of claim 19, wherein the instruction identifies hole punching, folding or cutting of the printing media.

21. The method of claim 1, wherein the user input is received through an interactive user interface.

22. The method of claim 21, wherein receiving the user input includes displaying a plurality of instruction identifiers in a document assembly form on a display, and receiving a user input selecting one of the instruction identifiers.

23. A method of displaying a finished form of a hard copy document, comprising:
receiving and storing an electronic document in a computer;
receiving in the computer a user input that selects an instruction for assembling a hard copy document corresponding to the electronic document;

generating a second electronic document which depicts the visual appearance of the first electronic document once printed and assembled in accordance with the instruction; and displaying the second electronic document.

24. A computer-assisted method of creating a hard copy document, comprising:
receiving an electronic document;
receiving user input that selects an instruction for assembling a hard copy document;
depicting a visual appearance of the electronic document as if printed and assembled in accordance with the instruction; and
providing the electronic document and the user input to a document assembler.

25. The method of claim 24, wherein the document assembler prints the electronic document to create the hard copy document, and assembles the hard copy document after printing in accordance with the instructions corresponding to the user input.

26. The method of claim 24, further comprising creating a second electronic document which depicts the visual appearance of the hard copy document assembled in accordance with the instruction.

27. A computer program, tangibly stored on a computer-readable medium, comprising instructions for causing a computer to:
receive a first electronic document;
receive a user input that selects an instruction for assembling a hard copy document;
determine in the computer the visual appearance of the first electronic document once printed and assembled in accordance with the instruction; and
produce as output the determined visual appearance.

28. The method of claim 5, wherein the computer receives user input that selects a plurality of instructions.

29. The method of claim 28, wherein the second electronic document includes a plurality of layers to determine the order in which effects associated with the plurality of instructions are applied to the first document.

30. The method of claim 20, wherein the instruction identifies cutting of the printing media.

31. The method of claim 20, wherein the instruction identifies folding of the printing media.

32. The method of claim 5, wherein the instruction identifies the size of the tile.

33. The method of claim 5, wherein the instruction identifies the position of the tile.

34. The method of claim 4, further comprising extracting information from the first electronic document.

35. The method of claim 10, further comprising adding a tile depicting a change in the visual appearance resulting from the instruction to the inserted page of the first electronic document.

36. The method of claim 11, wherein retrieving the tile includes determining whether the cover sheet is a first page or a final page, and selecting the tile based on this determination.

37. The method of claim 5, wherein the instruction identifies a binding option and the tile obscures a portion of the first electronic document where pages of the assembled document would be bound.

38. A method of depicting a hard copy document, comprising:
receiving in a computer an electronic document;

receiving in the computer a user input that selects an instruction for assembling a hard copy document by selecting pre-printing physical characteristics of a print media material on which the electronic document will be printed;

determining in the computer a visual appearance of the first electronic document as if assembled in accordance with the instruction and then printed; and
producing as output the determined visual appearance.

39. A method of depicting a hard copy document, comprising:

receiving in a computer an electronic document;

receiving in the computer a user input that selects an instruction for assembling a hard copy document by physically modifying a print media on which the electronic document will be printed;

determining in the computer a visual appearance of the first electronic document as if printed and then assembled in accordance with the instruction; and
producing as output the determined visual appearance.

40. A method of depicting a hard copy document, comprising:

receiving in a computer a first electronic document;

receiving in the computer a user input that selects an instruction for assembling a hard copy document by binding a plurality of pages of print media on which the electronic document will be printed;

determining in the computer a visual appearance of the first electronic document as if printed and then assembled in accordance with the instruction; and
producing as output the determined visual appearance.

41. The method of claim 29, wherein the plurality of layers includes an organizational information layer, a background layer, a printed content layer, a virtual proof annotations layer, and a finishing options layer.

42. The method of claim 1, wherein producing the determined visual appearance as output includes displaying the determined visual appearance on a computer monitor.

43. The method of claim 1, wherein determining the visual appearance of the first electronic document includes obscuring a portion of the output in areas corresponding to a portion of the hard copy document that would be obscured when the hard copy document is printed and assembled in accordance with the instruction.

44. The method of claim 43, wherein the instruction identifies a stapling binding, and the obscured portion is located where the staple will be placed in the hard copy document.

45. The method of claim 1, wherein determining the visual appearance of the first electronic document includes providing a visual indication of the thickness of the assembled document.

46. A method of depicting a hard copy document, comprising:
receiving in a computer an electronic document having content and formatting information;
receiving in the computer a user input that selects an instruction for assembling a hard copy document;
determining in the computer a visual appearance of the electronic document once printed with the content arranged according to the formatting information and assembled in accordance with the instruction; and
producing as output the determined visual appearance.

47. A method of generating an assembled hard copy document, comprising:
receiving an electronic document having content and formatting information;
receiving a user input that selects an instruction for assembling a hard copy document;

Applicant : Ivan Markovic, et
Serial No. : 08/978,753
Filed : November 26, 1997
Page : 24

Attorney [REDACTED]cket No.: 07844-199001 / P178

determining a visual appearance of the electronic document once printed with the content arranged according to the formatting information and assembled in accordance with the instruction;

displaying the determined visual appearance;

receiving a user input accepting the determined visual appearance;

printing the electronic document with the content arranged according to the formatting information to generate a hard copy document; and

assembling the hard copy document in accordance with the instruction.